

Dow AgroSciences LLC  
9330 Zionsville Road  
Indianapolis, IN 46268-1054

I012725

-OP1

308 Building/2A  
April 9, 2002



Document Processing Desk - 6(a)(2)  
Office of Pesticide Programs - 7504C  
U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460-0001

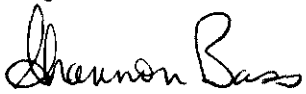
RE: FIFRA § 6(a)(2) Report  
Vikane\* Gas Fumigant  
EPA Registration Number: 62719-4  
Active Ingredient: Sulfuryl Fluoride  
CAS Registry Number: 002699-79-8  
DERBI Number: 104745  
State: HI  
Severity Category: H-A

Dow AgroSciences submits the following information in response to its understanding of the U.S. Environmental Protection Agency's interpretation of FIFRA § 6(a)(2). However, Dow AgroSciences has not concluded that this information regards an "unreasonable adverse effect on the environment" or that it is reportable under FIFRA § 6(a)(2).


Dow AgroSciences received the enclosed information regarding an alleged human death.

If you wish to discuss this matter further, please call us.

Regards,

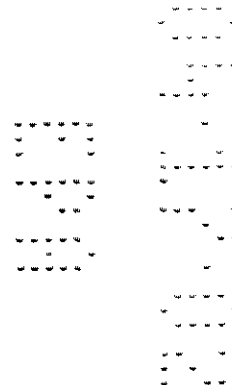
  
Shannon Bass  
EH&S Global Product Leader  
(317) 337-4983

Prepared by:

  
Stacey Fruits  
Product Stewardship Administrator  
(317) 337-4577

\*Trademark of Dow AgroSciences

*Copied for J. Blondell  
4/17/2002*



**Case Report - Case Number: 1-3502017 Client: Dow AgroSciences**

Client Name:	Dow AgroSciences
Case Number:	1-3502017
Case Date/Time:	4/3/02 7:41:46 PM
Call Type:	Exposure

**Caller Information**

Caller's Name:	Dr. Tortolini
Relation to Patient:	Healthcare Professional
Caller Address:	Helo Hawaii Medical Center Hawaii USA
Caller Phone:	(808) 974-6907
Fax:	
Alternate Phone:	

**Patient 1 Information**

Patient's Name:	unknown male
Age/Gender:	42 Years /Male
Weight:	kgs
Species/Breed:	Human
Exposure Route:	Inhalation,
Symptoms and Onset:	secretions, Unable to determine psychosis, Unable to determine
Duration of Symptoms:	
Treatments to Date:	No therapy,
Management Site:	HCF
HCF Recommended:	Yes
Lab Results:	
Severity Assessment:	Pending
Case Priority:	High

**Product 1 Information**

Product Name:	Vikane
Active Ingredient:	Sulfuryl Fluoride
UPC Code:	
EPA #:	62719-4
FIFRA 6(a)(2) Product:	Y
Exposed to Concentrate:	Unknown
Non-Company Product Name:	
Other Product Not in List Name:	

**Product 2 Information**

Product Name:	Product Not In List
Active Ingredient:	
UPC Code:	
EPA #:	
FIFRA 6(a)(2) Product:	N
Exposed to Concentrate:	Unknown

DERBI: 104745  
Report: Yes ☒ SC #113  
If no, Why: ☒ No ☒ H. A.   
Date: 4/4/02   
4/4/02   
2

<b>Non-Company Product Name:</b>	
<b>Other Product Not in List Name:</b>	unknown organo phosphate

#### Circumstances

<b>Exposure Site:</b>	Unknown
<b>Packaging Issues:</b>	
<b>When Exposure Occurred:</b>	0 Unknown
<b>Exposure Reason:</b>	Unintentional- General

#### Note 1

<b>Date/Time:</b>	4/3/02 7:41:48 PM
<b>Name of Specialist:</b>	Kurt Walstrom
<b>History:</b>	<p>Family practice MD calling from ICU Helo Medical center Hawaii. He is reserved in giving patient information and opens with a "hypothetical exposure" asking what would be expected if a person were to enter a home shortly after having the tent removed. He is the primary care provider of a 42 yo male patient that presented 2 weeks ago with psychosis and copious respiratory secretions. He decompensated since admission, details not provided, and is presently on a ventilator with pancreatic problems. Caller asking if symptoms could be consistent with Vikane exposure. He also brought up the possibility of organophosphate exposure-due to persistent copious respiratory secretions-but is unaware of any known history of this as well. Rec: reviewed toxicology of sulfuryl fluoride exposure, including range of symptoms, and supportive management. It is difficult to offer recommendations with such a paucity of patient information. Treating a patient for vikane exposure is completely different from treating a patient with organophosphate poisoning. Based on the strangeness of this case I would like to contact medical toxicology support. Spoke with JG, LS. Spoke with Dr. Brownson at Dow. Dr. Brownson to call Dr. Tortillini Jay RN from Helo medical center called asked about use of 2PAM and atropine. Jay also without details New orders for 2pam and atropine from Dr. Tortillini. Local PC involved as well. Apparently exposure is now believed to be OP?????????? Roman Dycus 808-779-7025 called: updated him as to above.</p>

#### Note 2

<b>Date/Time:</b>	4/3/02 10:13:33 PM
<b>Name of Specialist:</b>	Wiebke Droege
<b>History:</b>	<p>7:39 PM Caller (Roman Dycus) is rep for Dow AgSci in Honolulu, HI. Was called by a Dr. Tortolini, Helo Medical Ctr, HI. A: Tried to contact Dr. Tortolini; however on the phone with toxicologist KW at IPC.</p>

#### Note 3

<b>Date/Time:</b>	4/4/02 10:16:42 AM
<b>Name of Specialist:</b>	Joey Richardson
<b>History:</b>	e-mailed case to Dr Brownson

**Case Report - Case Number: 1-3502017 Client: Dow AgroSciences**

Client Name:	Dow AgroSciences
Case Number:	1-3502017
Case Date/Time:	4/3/02 7:41:46 PM
Call Type:	Exposure

**Caller Information**

Caller's Name:	Dr. Rachel Tortolini
Relation to Patient:	Healthcare Professional
Caller Address:	Hilo Medical Center Hilo Hawaii 96720 USA
Caller Phone:	(808) 974-6907
Fax:	
Alternate Phone:	

**Patient 1 Information**

Patient's Name:	
Age/Gender:	40 Years /Male
Weight:	kgs
Species/Breed:	Human
Exposure Route:	Inhalation,
Symptoms and Onset:	secretions,Unable to determine psychosis,Unable to determine N Coma,Unable to determine D Erythema/Flushed,Unable to determine C Cardiac Arrest,Unable to determine C Bradycardia,Unable to determine
Duration of Symptoms:	Persisted until death
Treatments to Date:	No therapy, T 2-PAM,
Management Site:	HCF
HCF Recommended:	Yes
Lab Results:	
Severity Assessment:	Death
Case Priority:	High

**Product 1 Information**

Product Name:	Vikane
Active Ingredient:	Sulfuryl Fluoride
UPC Code:	
EPA #:	62719-4
FIFRA 6(a)(2) Product:	Y
Exposed to Concentrate:	NA
Non-Company Product Name:	
Other Product Not in List Name:	

**Product 2 Information**

Product Name:	Product Not In List
Active Ingredient:	
UPC Code:	
EPA #:	
FIFRA 6(a)(2) Product:	N

\*Personal privacy\*

Exposed to Concentrate:	NA
Non-Company Product Name:	
Other Product Not in List Name:	unknown organo phosphate

#### Circumstances

Exposure Site:	Unknown
Packaging Issues:	Label Directions Not Followed
When Exposure Occurred:	0 Unknown
Exposure Reason:	Intentional- Misuse

#### Note 1

Date/Time:	4/3/02 7:41:48 PM
Name of Specialist:	Kurt Walstrom
History:	Family practice MD calling from ICU Helo Medical center Hawaii. He is reserved in giving patient information and opens with a "hypothetical exposure" asking what would be expected if a person were to enter a home shortly after having the tent removed. He is the primary care provider of a 42 yo male patient that presented 2 weeks ago with psychosis and copious respiratory secretions. He decompensated since admission, details not provided, and is presently on a ventilator with pancreatic problems. Caller asking if symptoms could be consistent with Vikane exposure. He also brought up the possibility of organophosphate exposure-due to persistent copious respiratory secretions-but is unaware of any known history of this as well. Rec: reviewed toxicology of sulfuryl flouride exposure, including range of symptoms, and supportive management. It is difficult to offer recommendations with such a paucity of patient information. Treating a patient for vikane exposure is completely different from treating a patient with organophosphate poisoning. Based on the strangeness of this case I would like to contact medical toxicology support. Spoke with JG, LS. Spoke with Dr. Brownson at Dow. Dr. Brownson to call Dr. Tortillini Jay RN from Helo medical center called asked about use of 2PAM and atropine. Jay also without details New orders for 2pam and atropine from Dr. Tortillini. Local PC involved as well. Apparently exposure is now believed to be OP?????????? Roman Dycus 808-779-7025 called: updated him as to above.

#### Note 2

Date/Time:	4/3/02 10:13:33 PM
Name of Specialist:	Wiebke Droege
History:	7:39 PM Caller (Roman Dycus) is rep for Dow AgSci in Honolulu, HI. Was called by a Dr. Tortolini, Helo Medical Ctr, HI. A: Tried to contact Dr. Tortolini; however on the phone with toxicologist KW at IPC.

#### Note 3

Date/Time:	4/4/02 10:16:42 AM
Name of Specialist:	Joey Richardson
History:	e-mailed case to Dr Brownson

#### Note 4

Date/Time:	4/4/02 11:33:57 AM
Name of Specialist:	John Gualtieri
History:	Received incident description notes from Dr. Brownson of Dow

	<p>AgroSciences. They are as follow, 4-3-02 Phone call from Kurt Walstrom at PROSAR; he received call from Dr. Tortolini who has 42yr old male patient in Critical Care unit at Hilo Medical Center with history of chronic paranoid schizophrenia who presented 2 wk ago in delirious state with profuse respiratory secretions, then decompensated, developed apparent pulmonary edema and pancreatic failure, now comatose on ventilator support. No definite history of exposure; speculation that patient may have entered a tented fumigated structure, or ingested OP. I reviewed the toxicology of sulfurlyl fluoride and chloropicrin, and faxed a TIME A report to the hospital; I suggested obtaining a serum fluoride. Kurt had previously supplied MSDS; Roman Dikas was contacted and supplied info from Vikane manual. Dr. Tortolini indicated that police and patient's psychiatrist were trying to reconstruct possible exposure scenario. In Dr. Brownson's conversation with Dr. Tortolini, Dr. Tortolini indicated that patient is a chronic paranoid schizophrenic who may have entered a tented structure, and now is in respiratory failure on ventilator support. Dr. Brownson explained that after 24hr from fumigation typical sulfurlyl fluoride terminal concentration levels would be 500-2000ppm (prior to tent removal), depending on initial dose. An individual exposed for a short period at a level of 500ppm would likely suffer pulmonary injury and develop acute pulmonary edema within 24-72hr, but would likely be able to exit the structure without collapse. Note that chloropicrin warning agent is used in these applications, and is sufficiently irritating (very disagreeable pungent odor at 1ppm) that normal individuals would not stay in a tented structure; chloropicrin diffuses from structures much more slowly than sulfurlyl fluoride. Also, consider a serum fluoride level to assess your patient's exposure. A previous fatal sulfurlyl fluoride exposure case had serum fluoride 20mg/L.</p>
--	--

## Note 5

Date/Time:	4/4/02 1:01:51 PM
Name of Specialist:	David Mueller
History:	"Mary" ICU RN, left message, provided case# and 800#

## Note 6

Date/Time:	4/4/02 1:19:12 PM
Name of Specialist:	David Mueller
History:	<p>Mary, RN, called back The patient ( [REDACTED] age 40yrs) is currently running 106.6 F, and expected to be seizing soon. They are still trying to do labs, but the 24 hour urine due back soon. Tx: Currently includes 2-PAM. Question: If the lab tests come back positive for 2-PAM, is the patient's heart still acceptable for organ donation if pt terminates. I promised to have our clinical toxicologist fu. Mary requested the CT contact Dr. Rachel Tortolini directly Office 808-969-9333</p>

## Note 7

Date/Time:	4/4/02 1:41:46 PM
Name of Specialist:	David Mueller
History:	<p>Talked to Mary, and stated that Dr. Tortilli should again contact Dr. Brownson regarding possibility of cardiac tissue harvesting. Mary thanked me for the information, and is hoping to have the issue of actual exposure cleared up in case the possibility of organ harvest becomes reality. Mary has case# and 800#, and wishes future contact through Dr. Tortilli.</p>

**Note 8**

<b>Date/Time:</b>	4/5/02 2:11:49 PM
<b>Name of Specialist:</b>	Wiebke Droege
<b>History:</b>	

**Note 9**

<b>Date/Time:</b>	4/5/02 2:26:18 PM
<b>Name of Specialist:</b>	Wiebke Droege
<b>History:</b>	Was put on hold for 5 min. by office. Called med ctr., Dr. T. will be in after 2 PM. Will reschedule. Forwarded case# to evening tox staff.

**Note 10**

<b>Date/Time:</b>	4/5/02 2:42:30 PM
<b>Name of Specialist:</b>	Wiebke Droege
<b>History:</b>	Called office. Was put on hold for 4 min. Will try later. Dr. Tortolini will also be at hospital after 2 PM Hawaiian time today.

**Note 11**

<b>Date/Time:</b>	4/5/02 8:33:37 PM
<b>Name of Specialist:</b>	Ann Thompson
<b>History:</b>	Spoke with RN Jol Ani. They were about to extubate patient when patient's mother called from Denver asking if her son could be used as an organ donor. Nurse wants to know if this is possible. Do not see conclusion in notes. Spoke with Dr. Tortolini and discussed the same. Will call and see if there was a decision. Spoke with DF. We can not answer this question. Called back and spoke to Jol Ani. Discussed that we are unable to answer this question. Discuss with Dr. Tortolini who was to have spoken to Dr. Brownson. E-mailed DF, JG, LT, SB. Did not reset CB. Call for outcome?

**Note 12**

<b>Date/Time:</b>	4/8/02 1:07:47 PM
<b>Name of Specialist:</b>	John Gualtieri
<b>History:</b>	Spoke with RN. She states that patient has not expired although he is doing poorly following his extubation. Presently in liver and renal failure. There is no additional information on what type of toxicological exposure he may have had. She admits that everything up to this point is simply hearsay.

**Note 13**

<b>Date/Time:</b>	4/9/02 2:26:09 PM
<b>Name of Specialist:</b>	Deborah Nagarajan
<b>History:</b>	Nurse calling, pt died last night/ bradycardic and expired, unknown if autopsy planned, tox results still pending for approx another 10 days. Disc: thanked caller for info, cb prn. Notified CL JG/ clin tox RK.



## FIFRA § 6(a)(2) Global Adverse Effects Reporting Form

FIFRA § 6(a)(2) does not require investigation of alleged incidents. Please complete this form, to the best of your ability, with the knowledge you have on any incident without further investigation. However, if you receive additional information it is your responsibility to submit a supplemental report.

### Send completed forms to:

e-mail: [Aerc@dowagro.com](mailto:Aerc@dowagro.com)

Questions: Global AERC Administrator  
(317) 337-4577

mail: Dow AgroSciences  
9330 Zionsville Road  
Indianapolis, IN 46268  
Attention: AERC-308 Building

## Administrative Information

Your Name:	Paul Brownson
Date you became aware of the Incident:	(month/day/year) April 3, 2002

### Reporter (person reporting incident to you):

Last Name:	Tortolini	First Name:	Rachel Frances
Street Address:	Hilo Medical Center, 1190 Waianuenue Ave		
City:	Hilo	State/Country:	HI
Zip Code:	96720		
Telephone Number:	8098-974-6907		

### Contact Person (if different from the Reporter)

Last Name:	Walstrom	First Name:	Kurt
Street Address:	PROSAR, 1295 Bandana Blvd, Suite 335		
City:	Saint Paul	State/Country:	MN
Zip Code:	55108		
Telephone Number:	888-779-7921		

## Product Information

Product(s) involved:	? Vikane, chloropicrin, ? organophosphate (unknown)
U.S. EPA Registration Number:	
Exposed to concentrate prior to dilution:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown



## Exposure Information

Date of Exposure: 2 weeks prior (?)

Geographical location of exposure: Hilo, HI

How exposed? ☐ Direct Contact ☐ Ingestion ☒ Inhalation ☐ Spill ☐ Other \_\_\_\_\_

Brief description of alleged incident:

4-3-02 Phone call from Kurt Walstrom at PROSAR; he received call from Dr. Tortolini who has 42yr old male patient in Critical Care unit at Hilo Medical Center with history of chronic paranoid schizophrenia who presented 2 wk ago in delirious state with profuse respiratory secretions, then decompensated, developed apparent pulmonary edema and pancreatic failure, now comatose on ventilator support. No definite history of exposure; speculation that patient may have entered a tented fumigated structure, or ingested OP. I reviewed the toxicology of sulfuryl fluoride and chloropicrin, and faxed a TIME A report to the hospital; I suggested obtaining a serum fluoride. Kurt had previously supplied MSDS; Roman Dikas was contacted and supplied info from Vikane manual. Dr. Tortolini indicated that police and patient's psychiatrist were trying to reconstruct possible exposure scenario.

## Application Circumstances

Evidence label directions were not followed: ☐ Yes ☐ No ☒ Unknown

Application was made by:

☐ Pest Control Operator ☐ Lawn Care Operator ☐ Homeowner ☒ Other unknown

Circumstances regarding application:

Unknown; exposure not confirmed

Type of incident: ☒ Human ☐ Domestic Animal ☐ Fish/Wildlife (Fill out the appropriate attached page)

**Alleged Human Exposure**

Clarify how many people are involved with the alleged exposure:	
Age, if known, adult or child: 42yr	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult
Gender: <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	If female, is she pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Occupation (if related to use of product):	
Was protective clothing worn: <input type="checkbox"/> Yes <input type="checkbox"/> No	
How many workdays were lost due to illness:	
Route of exposure: <input type="checkbox"/> Skin <input type="checkbox"/> Eye <input type="checkbox"/> Ingestion <input type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Unknown	
Was alleged adverse effect a result of: <input type="checkbox"/> Suicide/Homicide <input type="checkbox"/> Attempted suicide/homicide <input type="checkbox"/> N/A	
Time between exposure and onset of symptoms: (hr/day/min) unknown	
Symptoms experienced: Delirium, seizure, pulmonary edema	
Type of medical care sought: hospital	
Laboratory test results: (attach copy if available)	
Explanatory or qualifying information surrounding the incident: Alleged exposure is speculative	

**Treating Physician's Information**

Last Name: Tortolini	First Name: Rachel Francis
Street Address:	
City:	State/Country: Zip Code:
Telephone Number:	

**Alleged Fish, Wildlife, Plant, or Non-Target Organism Exposure**

Species affected:
Number of individuals per species:
List of symptoms or adverse effects:
Magnitude of the effect: (examples include: miles of stream, square area of terrestrial habitat)
If plant, plant type: (examples include: forest forage, orchard, home garden, ornamentals)
Pesticide method of application and rate:
Laboratory results: (attach lab report if available)
Description of the habitat and the circumstances under which the incident occurred:
Distance from treatment site to exposed site:
Explanatory or qualifying information surrounding the incident:

**Alleged Domestic Animal Exposure**

Type of animal: (examples include: bovine, equine, avian, poultry, canine, feline)
How many involved:
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown Age: Weight (lb/kg):
Route of exposure: <input type="checkbox"/> Skin <input type="checkbox"/> Eye <input type="checkbox"/> Ingestion <input type="checkbox"/> Inhalation <input type="checkbox"/> Unknown
Time between exposure and onset of symptoms: (hr/day/min)
Symptoms experienced:
Did a veterinarian treat animal: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Laboratory test results: (attach copy if available)
Explanatory or qualifying information surrounding the incident:

***Treating Veterinarian Information***

Last Name:	First Name:	
Street Address:		
City:	State/Country:	Zip Code:
Telephone Number:		